IS-5145
UC-20e

Annual

Site Environmental Report

Calendar Year 2000

Ames Laboratory

Iowa State University

Ames, Iowa 50011-3400

Prepared for the
U.S. Department of Energy
Under Contract No. W-7405-Eng-82

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1.0 EXECUTIVE SUMMARY

This report summarizes the environmental status of Ames Laboratory for calendar year 2000. It includes descriptions of the Laboratory site, its mission, the status of its compliance with applicable environmental regulations, its planning and activities to maintain compliance, and a comprehensive review of its environmental protection, surveillance and monitoring activities.

Ames Laboratory is located on the campus of Iowa State University (ISU) and occupies twelve buildings owned by the Department of Energy (DOE). See the Laboratory's Web page at www.external.ameslab.gov for locations and Laboratory overview. The Laboratory also leases spaces in ISU owned buildings.

In 2000, the Laboratory accumulated and disposed of waste under U.S. Environmental Protection Agency (EPA) issued generator numbers. Ames Laboratory submitted a Proposed Site Treatment Plan to EPA in December 1995. This plan complied with the Federal Facilities Compliance Act (FFCA). EPA approved it in January 1996. The consent agreement/consent order was issued in February 1996. The Laboratory received a Notice of Violation (NOV), containing five citations, from EPA Region VII during a RCRA inspection in January 1999. The citations were minor and were corrected by the Laboratory within the time allocated by the EPA. See correspondence in Appendix D. The Laboratory was in compliance with all applicable Federal, State, Local and DOE regulations and orders.

There were no radiological releases or effective doses to the public due to Laboratory activities.

Pollution awareness, waste minimization and recycling programs were implemented in 1990 and updated in 1999. Included in these efforts were a waste white paper and green computer paper-recycling program. Ames Laboratory also continued to recycle salvageable metal, used oil, Styrofoam peanuts, freon, and exchanged mercury thermometers for non-mercury thermometers (1999). The Laboratory implemented the collection of CRT's for recycling in 2000.

Performance measures and initiatives are included in the contract between Iowa State University and DOE-CH. The Laboratory tracks performance data and reports performance levels to DOE-CH.

March of 1999 the Department of Energy issued an Assistance Grant to Iowa State University for continued groundwater monitoring through March of 2002 and for proper closure of the monitoring wells associated with the former Chemical Disposal Site (CDS). The CDS, which is located on ISU property, near the Applied Science Complex (ASC) was used from 1957 through 1966 for burying waste chemicals and metal slags. The materials were buried according to standard practice at the time. The site has been remediated and cleared by the regulators. See correspondences in APPENDIX A.

2000 Ames Laboratory Site Environmental Report Feedback Form

This feedback form is provided to solicit public input on the development and improvement of future SER's. Public input is encouraged and appreciated. Remove and copy as needed; attach additional pages as needed or send comments to kayser@ameslab.gov.

Return to: Ames Laboratory
Environmental, Safety, Health & Assurance
G40 TASF, Iowa State University
Ames, IA 50011-3400
ATTN: Dan Kayser

1. What prompted your interest in environmental activities at Ames Laboratory?

2. In what ways can this report document and/or format be improved?

3. Do you have any questions on specific items or issues in this report?

4. Do you have any other comments?

2.0 INTRODUCTION

2.1 Site Description

Ames Laboratory is a U.S. DOE Facility located on the campus of Iowa State University (ISU) at Ames, Iowa. See the Laboratory's Web page at www.external.ameslab.gov for locations and Laboratory overview. Ames is a government owned contractor operated (GOCO) facility. ISU is the contractor. The Technical and Administrative Support Facility (TASF) houses most of the Laboratory management offices. The TASF is located at latitude 40° 01' 30" north by longitude 93° 39' 00" west. The buildings owned by the Department of Energy (DOE) are listed below.

Building	Gross Square Feet
Spedding Hall	107,630
Metals Development Building	69,663
Wilhelm Hall	56,541
TASF	46,991
Campus Warehouse Building	16,506
Mechanical Maintenance Building	8,540
Paint and Air Conditioning Shops Building	4,954
Construction Storage Shed	4,398
Storage Shed	2,100
Records Storage Building	1,679
Storage Shed	500
Total DOE Owned	327,102

In addition to the buildings owned by the DOE, Ames Laboratory leased a net total of 26,095 square feet of space from ISU in 2000. In 1987 the DOE transferred ownership of the buildings it owned at the Applied Science Complex (ASC) site to ISU. Ames Laboratory retains beneficial use of the Waste Handling Facility (WHF) and the High Pressure Test Cell through February 28, 2060. The WHF houses the Alpha Facility, a laboratory that was designed to use small amounts of radionuclides. No research work was done in the Alpha Facility in 2000. The ASC is located one-mile northwest of the ISU main campus. See WebPages at www.external.ameslab.gov/common/amesmap.html. Click on Iowa State University Campus Map.

The City of Ames, Iowa surrounds the ISU main campus. In 2000 the approximate population of Ames was 48,700, which includes the ISU student population of approximately 25,400. The City of Ames is located in Story County, which has a population of 75,268.

The climate is temperate continental, and subject to wide temperature and precipitation ranges throughout the year. Mean monthly temperatures vary from a low of negative 7.5 degrees Celsius (18.5°F) in January to a high of 23.8 degrees Celsius (74.8°F) in July. Average rainfall equivalent precipitation varies from 1.8 centimeters (0.7 inches) in January to 13.7 centimeters (5.4 inches) in June.

The region is gently rolling with a slight overall gradient to the southeast. Under the shallow topsoil, the soils are glacial till with a depth of approximately 19.8 meters (65 feet). This material is underlain by predominantly limestone bedrock. In the central campus area, the depth to first groundwater is approximately 3.0 meters (10 feet). At the ASC site depth to groundwater averages approximately 5.5 meters (18 feet). Surface run-offs from both areas go into the Squaw Creek, a tributary of the South Skunk River. The streams have a combined average daily flow of approximately 644 million liters (170 million gallons).

2.2 Organization and Administration

Iowa State University under Contract Number W-7405-Eng-82 with the U.S. DOE operates Ames Laboratory. The DOE's Chicago Operations Office oversees operation of the Laboratory. Ames is a member of the Institute for Physical Research and Technology (IPRT), an ISU association of research laboratories. In 2000, the Laboratory employed 429 person totaling 284 full time equivalents. See Organizational Chart Figure 2-2.

Ames Laboratory
Organization

AMES LABORATORY

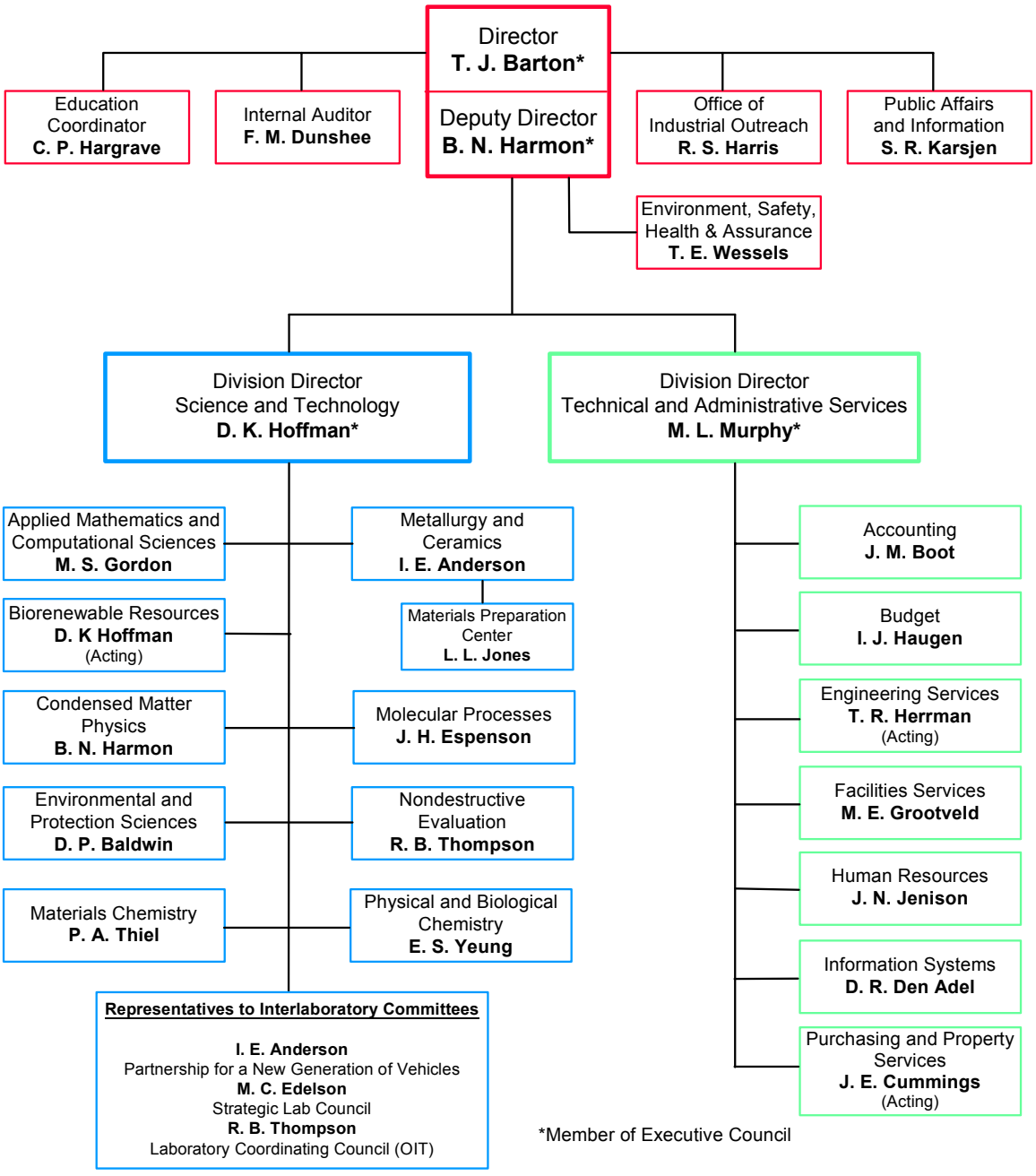

Figure 2-2

2.3 Mission

The Ames Laboratory conducts fundamental and applied research on issues of national concern, and develops and transfers technologies to improve industrial competitiveness and enhance U.S. economic security. At the forefront of current materials research, high-performance computing, and environmental science and management efforts, Ames seeks solutions to energy-related problems through exploration of physics, chemistry, engineering, applied mathematics and materials sciences.

2.4 Purpose of Site Environmental Report

The primary purpose of this report is to summarize the performance of Ames Laboratory's environmental programs, present highlights of significant environmental activities, and confirm compliance with environmental regulations and requirements. The summarized data and conclusions from Ames Laboratory environmental monitoring during calendar year 2000 are presented in this annual Site Environmental Report. This report is a working requirement of Department of Energy Order 231.1, *Environment, Safety, and Health Reporting"*.

3.0 COMPLIANCE SUMMARY

3.1 Calendar Year 2000 Compliance Status

The Laboratory was in compliance with all applicable environmental regulations in 2000. The U.S. Environmental Protection Agency (EPA) inspected the Laboratory on January 19-20, 1999 and issued one "notice of violation" (NOV), that identified five citations. The Laboratory corrected the citations and responded to the NOV within the EPA's prescribed time frame. The EPA required no further actions. See correspondence in APPENDIX D.

3.2 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

The proper public comment periods have been observed for specified site restoration activities. The community advisory group (CAG), formed in May 1994, was and is the primary vehicle for public input to these activities. The CAG met with the Ames Laboratory Director and other interested parties on an as needed basis. The last CAG meeting with Ames Laboratory and ISU representatives was on February 23, 1998, to discuss the Fire Service Institute Training Area. Two letters (May and June 1999) were sent to CAG members regarding the status and remedial activities of the Fire Service Institute Training Area. See section 5.4.4.

A small area located at 13th street and Stange Road in Ames was sampled in 1995 under IDPH supervision. This area was known as the Old Iowa State College dump. Uranium and thorium activities were at background levels. No decisions concerning any further actions have been discussed or reached at this point in time. See section 5.4.3.

3.3 Resource Conservation and Recovery Act (RCRA)

Ames Laboratory is a Government Owned-Contractor Operated (GOCO) facility. Therefore, all waste generated is DOE waste. In 2000, DOE had three RCRA waste generator identification numbers from the Environmental Protection Agency (EPA) Region VII. See the summary table in section 3.16. Activities associated with the main campus facility number were those of a large quantity generator. In calendar year 2000, 2862 kg of hazardous waste was properly disposed through a contracted vendor. All reporting requirements were meet. Another EPA generator number was for a conditionally exempt small quantity generator for the Waste Handling Facility at the ASC. This facility is utilized to stage radiological, hazardous and mixed wastes. The last active generator number was for the CDS source removal waste only, a conditionally exempt small quantity generator. This activity was completed in 1995. The Iowa Department of Public Health (IDPH) has released the CDS for "unrestricted" use. See correspondences in APPENDIX A. Ames Laboratory contacted EPA Region VII in May of 1999 requesting the termination of the CDS EPA ID number.

The Laboratory received one "notice of violation" (NOV), which identified five citations, on January 19-20, 1999, during a RCRA inspection from EPA Region VII. The inspection included facilities covered under RCRA I.D. Number IA6890008950. The Laboratory corrected and responded to the NOV within the EPA's prescribed time limit. The Laboratory received a letter of no further actions required from EPA Region VII. See correspondence in APPENDIX D.

The EPA Biennial Report for calendar year 1999 was completed and submitted on time in February 2000. The report is required of all large quantity generators and is a record of wastes removed from the facility. The next report is due March 1, 2002.

Ames Laboratory maintained its conservative waste disposal policy in which materials that are not regulated by RCRA, yet which might pose or be perceived to pose any kind of a potential hazard are managed as though they are RCRA regulated wastes. The Laboratory disposed wastes at an out of state EPA permitted facility. It remained the Laboratory's practice to have these RCRA regulated wastes incinerated rather than put into a permitted landfill, when possible. Incineration ensured the complete destruction of the hazardous constituents and eliminated any potential for members of the public being exposed in the future. Hazardous wastes were shipped out quarterly. Approximately 5.0 m^3 of low-level radioactive waste was shipped to Hanford for burial. Approximately 0.2 m^3 of mixed waste (PCBLLW) was shipped to Envirocare of Utah for burial. No RCRA LLW was generated or disposed in 2000.

The Laboratory had no underground storage tanks (UST's) in 1999. The last UST (emergency generator diesel fuel) was removed in August 1995. An aboveground, double walled diesel tank with interstitial leak detection replaced it. The tank did not experience any problems in 2000.

3.4 Federal Facilities Compliance Act (FFCA)

The FFCA is part of 42 USC 6901 and amends a part of RCRA. FFCA requires the preparation of site treatment plans for the handling of mixed wastes. Ames' Conceptual Site Treatment Plan (STP) was written in 1994 as a first step in compliance with the FFCA. It was expanded into a Draft Site Treatment Plan that received regulatory and public comments. In 1995, the draft plan was revised into a proposed plan and submitted to EPA on December 20, 1995. EPA approved the STP in January 1996.

All mixed waste streams generated at the Laboratory are managed in accordance with the Site Treatment Plan. The transuranic (TRU) waste stream was eliminated from the STP because it had not been generated yet. When generated the TRU waste will be managed according to applicable State and Federal Regulations as well as applicable DOE Orders. Transuranic solutions were neutralized and stabilized in the fall of 2000. The stabilized material will be disposed at Hanford as LLW in 2001. Contaminated lead was eliminated from the STP because in-process treatment prevents it from meeting the definition of mixed waste. A PCB Low Level Waste (LLW) generated from a sump (1998) was disposed in 2000 at Envirocare of Utah. The PCB LLW is a result of legacy activities. It is not a routinely generated waste stream and will be managed according to applicable State and Federal Regulations as well as applicable DOE Orders.

3.5 National Environmental Policy Act (NEPA)

The Laboratory had four categorical exclusion (CX) determinations in 2000. Three activities involved facility renovations of HVAC and electrical systems. The fourth activity involved the disposal of PCBLLW to Envirocare of Utah. Categorical exclusions are classes of actions that DOE has determined do not individually or cumulatively have a significant effect on the environment and do not require the preparation of either an Environmental Assessment or an Environmental Impact Statement.

3.6 Clean Air Act (CAA) and National Emissions Standards for Hazardous Air Pollutants (NESHAPS)

U.S. EPA Region VII delegated CAA authority to the State of Iowa Department of Natural Resources (IDNR). IDNR does not require either construction or operating permits for laboratory fume hoods. In December 1996, IDNR issued construction permits for two existing sources of air emissions at Ames Laboratory. One is a paint booth and the other is a sand blaster. A graphics paint booth and a graphite lathe are both exempt from permitting. See correspondences in APPENDIX B.

The Laboratory was in compliance with all CAA requirements including the NESHAP regulations for radionuclide emissions from DOE facilities. The Laboratory used only small quantities of chemicals and radionuclide sources (for calibrating equipment), lab bench quantities, for research and development activities in 2000. Any air emissions generated by Ames Laboratory research activities were sporadic and in very small quantities. The Laboratory did not have any operation or activities in 2000 that produced radioactive air emissions, which could have exposed a member of the public. See correspondences in APPENDIX B. Historically any uses of radionuclides are used inside glove boxes and/or fume hoods. These hoods and boxes are equipped with high efficiency particulate air (HEPA) filters.

3.7 Clean Water Act (CWA)

Ames Laboratory does not have any regulated point source effluents. Neither Ames Laboratory nor ISU have any National Pollutant Discharge Elimination System (NPDES) permits. The City of Ames has an NPDES permit. The City of Ames has an agreement for wastewater pre-treatment with ISU, which includes Ames Laboratory wastewater. Both the City of Ames and the University sampled ISU wastewater effluent in 2000 as part of this agreement. The Laboratory discharged approximately 30,097,090 liters (7,950,810 gallons) of wastewater to the ISU sanitary sewer system in 2000. This was 3.0% of the total discharged from ISU's campus buildings. The University discharged 975,991,200 liters (257,829,590 gallons) of wastewater to the City of Ames sewer system. These numbers include all University buildings.

3.8 Safe Drinking Water Act (SDWA)

Drinking water for the Laboratory is supplied by the City of Ames public water system through the University's water mains. The Ames public water system is tested by the city to verify the SDWA standards are being met. The Laboratory used 30,097,090 liters (7,950,810 gallons) of potable water in 2000, or 2.5% of the 1,159,486,000 liters (306,303,673 gallons) used by the University.

Three Ames Laboratory drinking fountains were sampled for lead in 2000 by Ames Laboratory Facilities Services. Fountains in Wilhelm Hall, Metals Development and Spedding Hall were monitored in accordance with the Laboratory's policy for Monitoring Lead in Potable Water (46300.002). Samples are typically drawn and tested annually. An independent laboratory did the analysis. All samples were within regulatory limits for lead. The results are summarized in Table 3-1.

Table 3-1

Drinking Fountain Analysis

Building Location	**1995 Lead (mg/l)**	**1997 Lead (mg/l)**	**1998 Lead (mg/l)**	**1999 Lead (mg/l)**	**2000 Lead (mg/L)**
Spedding Hall, 1st floor west hallway	< 0.002				< 0.002
Spedding Hall, ground floor east hallway		< 0.002	< 0.002	< 0.002	
Wilhelm Hall, 3rd floor east hallway	0.003	< 0.002	< 0.002	< 0.002	< 0.002
Metals Development, room 158	< 0.002	< 0.002	< 0.002	< 0.002	< 0.004

The regulatory limit for lead is 0.015 mg/l.

3.9 Superfund Amendments and Reauthorization Act (SARA) Title III and Iowa Administrative Code (IAC), Rule 567, Chapter 131, Spill Response

In 2000 the Laboratory was exempt from the emergency reporting of the Superfund Amendments and Reauthorization Act (SARA) in Title III the Emergency Planning and Community Right to Know Act (EPCRA) under 40 CFR 370.40. However, the Laboratory does maintain memorandums of understanding (MOU) with the Iowa State Department of Pubic Safety and City of Ames Fire Department. Copies of MOU's are located in the "Ames Laboratory Emergency Plan". The Laboratory did not store any chemicals in excess of the threshold planning quantities (TPQ) in 2000. If a chemical is found to exceed the TPQ, the Laboratory will submit a Tier II report to the appropriate agencies.

Spills to the environment are reported to the Iowa Department of Natural Resources in accordance with the IAC, Rule 567, Chapter 131. Spills are cleaned up in accordance with the IAC, Rule 567, Chapter 133. There is no minimum reportable quantity under Chapter 131. No releases occurred in 2000. The Laboratory reported one release to the IDNR on March 29, 1999. This release consisted of water based hydraulic oil. During elevator shaft maintenance activities, in the Metals Development Building, oil was found in the soil. All contaminated soil was collected and properly disposed. All necessary reporting was submitted to the IDNR. No further action was required. Reportable spills, releases and occurrences are also entered into the DOE's Occurrence Reporting and Processing System (ORPS) as prescribed in DOE Order 232.1A. The Laboratory reports any "reportable" spills/releases to DOE-CH on a quarterly basis.

3.10 Toxic Substances Control Act (TSCA)

No asbestos or asbestos containing material was disposed in 2000. Ames Laboratory asbestos is disposed in the Ames-Story Environmental Landfill. The landfill is permitted to accept asbestos under IDNR issued permit number 85-SDP-13-91P. The Laboratory complies with the State of Iowa Solid Waste Disposal Rule #102.14 and 40 CFR 61, Subpart M (asbestos NESHAP) when disposing of asbestos materials.

Approximately 340 kg of PCB ballasts were disposed in 2000. Ballasts were generated from routine maintenance and renovation activities.

A PCB Low Level Waste (LLW) generated from a sump (1998) was disposed (0.2 m^3) in 2000 at Envirocare of Utah. The PCB LLW is a result of legacy activities.

3.11 Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

Ames Laboratory does not purchase or use pesticides regulated by FIFRA.

3.12 Endangered Species Act (ESA)

No endangered species have been identified on or near Ames Laboratory facilities or Laboratory controlled areas.

3.13 National Historic Preservation Act (NHPA)

The State Historic Preservation Officer was contacted in 1997. As of September 16, 1997, there are nine structures on the campus that are on the state historic register. None of these buildings are associated with Ames Laboratory activities. DOE does not own any of the land supporting the Ames Laboratory buildings. It is all state property. Ames Laboratory has not conducted a formal archeological survey. Discussions in the past have been held on conducting a survey but there are no funds available at this time to conduct a survey.

3.14 Migratory Bird Treaty Act

No migratory birds are affected by Ames Laboratory activities.

3.15 Executive Order 11988, "Floodplain Management"

All Laboratory facilities are well outside the 100-year flood line as mapped by the U.S. Geological Survey (USGS) and the Iowa Geological Survey Bureau (GSB).

3.16 Executive Order 11990, "Protection of Wetlands"

No wetlands are affected by Ames Laboratory activities.

3.17 Summary of Permits

In 2000, Ames Laboratory had two air emissions source construction permits, but no environmental discharge, operational, storage, treatment or disposal permits for gaseous, liquid or solid effluents. DOE held three waste generator identification numbers associated with Ames Laboratory in 2000.

DOE Air Emissions Source Construction Permit Numbers

Permit Number	Type	Ames Laboratory Facility/Area	Expiration
96-A-1282	Air	Ames Lab Paint Booth	None
96-A-1283	Air	Ames Lab Sand Blaster	None

DOE RCRA Generator Identification Numbers

RCRA Generator ID #	Type	Ames Laboratory Facility/Area	Expiration
IA6890008950	LQG	Ames Lab #3-DOE (main campus)	None
IAD984617605	CESQG	Ames Lab #1-DOE (Waste Handling Facility)	None
* IA0000365973	SQG	Ames Lab #2-DOE/ISU (chemical disposal site)	None

- A request was submitted to EPA Region VII in May of 1999, requesting the termination of the CDS EPA ID number. The site has been released by the regulators and no further waste activities are planned.

4.0 ENVIRONMENTAL PROGRAM

4.1 Pollution Awareness, Waste Minimization and Recycling Programs

Ames Laboratory's waste minimization plan was originally implemented in 1990. The plan was updated in 1999. The plan conforms to Executive Order 13101. Elements of the plan include:

- A statement of management support and commitment.
- A waste minimization policy for the Laboratory.
- Goals.
- Waste minimization & recycling activities.
- Employee awareness.
- Affirmative procurement program

The Laboratory was engaged in waste minimization activities in 2000. These activities helped reduce the quantities of non-hazardous and hazardous wastes generated by the Laboratory. Examples include:

- Work Authorization System (WAS) reviews.
- The activities Readiness Review Procedure.
- Collection of surplus mercury and mercury thermometers.
- White paper and computer paper are recycled.
- Styrofoam peanut recycling.
- Chemical surplus redistribution.
- Telephone book recycling.
- Fluorescent bulb recycling.
- CRT recycling.

All other non-hazardous waste generated by the Laboratory, e.g., paper, garbage, trash, was collected and transported to the City of Ames' Resource Recovery Plant where it was processed. Combustible waste is used as fuel in the city's electrical utility power plant. Some scrap metal was sold for re-use. Used oil was recycled for re-use. Ames Laboratory Facility Services Group recovers R-12 refrigerants, except from vehicles, and R-22 refrigerants for recycling. Recovery equipment is registered with EPA Region VII under Number 608. Onsite contractual recovery and recycling with ISU is used as needed for all listed ozone depleting substances (ODS's). ISU and Ames Laboratory have separate Facility Services and ES&H units, but ISU is the management and operating contractor for DOE. Therefore, the ODS's do not change owners.

For affirmative procurement in 2000, 87% of Ames' paper products purchased were recycled material.

4.2 Performance Measures

In calendar year 2000, Ames Laboratory was not required to report to DOE through the Performance Indicator Database System (PIDS) on any environmental performance indicators or measures. There were no specific environmental performance measures written into the Ames Laboratory contract. The current Ames Laboratory contract requires PIDS reporting. Performance levels are reported to DOE-CH. The Laboratory tracked data in 2000 to report against ES&H performance measures, in the following areas:

1. Ensure the Safety and Health of the workforce and members of the public and the protection of the environment in all activities. The Contractor shall further ensure that management of ES&H functions and activities becomes an integral and visible part of the contractors work planning and execution process.

2. Measurement of the environmental performance and awareness of ongoing research activities. These activities include, but are not limited to, waste operations, general maintenance programs and the general conduct of operations.

3. Empowerment and training of workers and implementation of other necessary actions to prevent serious work-related injuries and fatalities and to minimize exposures to radiation.

5.0 ENVIRONMENTAL RADIOLOGICAL PROGRAM

5.1 DOE Order 5400.5, "Radiation Protection of the Public and the Environment"

Ames Laboratory has prepared guidance documents, which are based on the environmental radiation release criteria specified in DOE Order 5400.5.

5.2 DOE Order 435.1, "Radioactive Waste Management"

The majority of the Laboratory's radioactive waste is generated through renovation activities that occur in DOE buildings that have been contaminated by past activities. Even though DOE Order 435.1 is not part of the Laboratory's contract (W-7405-Eng-82) the Laboratory has written procedures to manage radioactive materials.

5.3 Property Release

Ames Laboratory uses a conservative approach to releasing materials and/or pieces of equipment, which have been used or stored in controlled areas and which have the potential to be radiologically contaminated. Any equipment/material from these areas is surveyed and smeared, and, if found to have removable or fixed plus removable radioactive material activity levels in excess of background levels are disposed as low level radioactive waste. This is in accordance with the Secretary of Energy's memorandum dated July 13, 2000, which suspended the unrestricted release for recycling of metal from radiological areas within DOE facilities.

5.4 Radiation Emissions and Doses

There were no point source releases from the Ames Laboratory complex in 2000. Diffuse source emissions were limited to low-level waste activities and remediation activities. Emissions from these activities were minimized or eliminated by engineering devices/structures, when necessary (i.e. containment cells with HEPA filtration).

Using the guidance found in 40 CFR 61.94, the annual radionuclide NESHAPS report was prepared as required. According to the guidance, and based on the isotope inventory in curies per year used at the Laboratory, air emissions were not required to be monitored. IDNR and IDPH do not require permits or monitoring for laboratory fume hoods under Chapter 20 IAC 567 22.1(2) (1). However, Appendix D to 40 CFR Part 61 does provide a method for estimating the radionuclide emissions for a year, for reporting purposes, based on the amount of radionuclides in curies used at a facility. The required parameters were used to calculate potential dose equivalent to the public due to estimated radionuclide emissions from the Laboratory. See correspondences in APPENDIX B.

5.5 Unplanned Releases

There were no unplanned or accidental radiological releases from Ames Laboratory during 2000.

5.6 Environmental Monitoring

Liquid aqueous waste (laundry machine water), when generated at the Waste Handling Facility (WHF), is analyzed for radioactivity as required by DOE Order 5480.1 (1) before release to the sanitary sewer. The wastewater is analyzed for radioactive content using gamma ray spectroscopy, gas proportional counting for gross alpha and gross beta activity, and liquid scintillation for tritium. No releases above 10 CFR 20.2003 and DOE Order 5400.5 (Chapters II and III) limits occurred in 2000. The WHF is located one-mile northwest of ISU main campus near the Applied Science Complex (ASC). See WebPages www.external.ameslab.gov/common/amesmap.html. Click on Iowa State University Campus Map.

No sampling of storm or sanitary sewer water was performed in 2000. The Chemical Disposal Site ground water was sampled. Sections 5.4 and 7.0 discuss groundwater.

5.7 Areas of Concern

Areas of concern are small local areas in or near the City of Ames that were, or could have been, contaminated by Ames Laboratory or ISU Manhattan Project Activities. Areas of concern include inactive waste sites, spill sites and other areas that had potential to be contaminated. Ames Laboratory, DOE, and ISU have or are currently addressing all known sites.

5.7.1 Chemical Disposal Site (CDS)

The CDS is a small former chemical burial site, located on ISU property, which was used from 1957-1966 for disposal of hazardous waste and waste from thorium and uranium production. A Phase I Remedial Investigation (RI) report was conducted for the CDS in 1992-1993. A source removal was done during the fall of 1994, with final waste shipments completed in March 1995. Nine Phase I RI wells were abandoned during the source removal.

The Phase II RI fieldwork was done in 1995 and 1996, including an ecological study. The 1996 network of 15 monitoring wells was installed in April 1995. Groundwater samples were collected for the Phase II RI in August and October 1995 and in January and April 1996. The samples were analyzed for twenty-three different parameters. Uranium and volatile contamination was detected in the wells closest to the excavated area.

A Phase II RI final draft report was issued on July 24th, 1996. A draft Focussed Feasibility Study and a draft Proposed Plan were issued concurrently with the RI report. A public meeting was held August 20th to discuss the documents and future plans for the site. The public comment period was extended from 30 days to 60. The documents generated numerous comments. To address these comments, a draft Responsiveness Summary was issued on December 5, 1996. The spring of 1997 ISU conducted a "site characterization", as advised by the IDPH.

Refer to the site work plans and investigation reports for detailed information concerning the CDS. Copies of all final reports are in the Ames Laboratory Public Repository at the Ames Public Library. See Table 5.7-1 analytical results for groundwater sampling activities.

Table 5.7-1

Chemical Disposal Site Groundwater Analysis

		Gross Alpha			Gross Beta		
Well	**Location**	**Nov-98**	**May-99**	**June-00**	**Nov-98**	**May-99**	**June-00**
4A	Background Well	< 5.0	< 5.0	< 7.0	< 4.0	< 3.0	< 10.0
4B	Background Well	< 4.0	-	< 8.8	< 4.0	-	< 14.0
Davidson Hall	Background Well	< 10.0	< 5.0	< 8.0	< 10.0	< 4.0	< 4.0
Lynch Farm	Background Well	< 9.0	< 6.0	< 10	< 9.0	12.0	< 9.0
Beef Nutrition	Background Well	< 8.0	6.0	< 9.0	< 8.0	6.5	16.0
Squaw Creek	Surface Water	< 7.0	< 5.0	< 6.0	< 7.0	3.9	< 4.0
SW 1	Surface Water	-	15.0	-	-	20.0	-
SW 2	Surface Water	220	< 7.0	-	220	14.0	-
SW 3	Surface Water	< 8.0	< 6.0	<4.0	6.7	4.7	< 5.0
10A	Site Well	360	550	900	820	1100	2700
10A FD	Site Well	370	1200	830	800	920	960
10B	Site Well	250	43.0	600	1000	150	1300
11A	Site Well	-	1.2	-	-	< 2.0	-
11B	Site Well	< 10.0	< 8.0	< 1.0	< 6.0	13.0	12.0

*The Iowa Department of Health did not require gross alpha or beta analysis for the fourth quarter (March 1998). Results are in pCi/L.

5.7.2 Inactive Waste Sites (IWS)

The regulators have released a Total of 10 IWS's. See Correspondence in Appendix C. The status of the sites released follows.

Site	Release Status	Date Released
Old Sewage Plant	Unrestricted use	1995
Grand Avenue Underpass	Unrestricted use	1996
Ames Municipal Cemetery	Unrestricted use	1996
Applied Sciences Complex	Unrestricted use	1996
Block House	Unrestricted use	1996
Little Ankeny Debris	Unrestricted use	1996
Annex I	Approved for current use	1996
Annex II	Approved for current use	1996
Ames Municipal Airport	Approved for current use	1996
Chemical Disposal Site	Unrestricted use	1998

5.7.3 Old Iowa State College Dump Site

Another area of concern is a five-acre tract at 13th street and Stange Road in Ames. See WebPages www.external.ameslab.gov/common/amesmap.html. Click on Iowa State University Campus Map. Manhattan Project and Ames Laboratory wastes were disposed there in the early 1940's. In 1946, 250 tons of uranium extraction wastes were removed from the site for processing.

In response to a public meeting it was determined the radiological waste portion of the site would be sampled to determine if it posed a threat to human health or the environment. Sampling was conducted in August 1995. The samples were below action levels for thorium, uranium and their decay products, indicating no threat to human health or the environment. DOE sent results to IDPH in September 1995, indicating that DOE considers the radiological investigation closed. IDPH did not formally respond to the sampling report, but forwarded it to ISU. The November 2, 1995 cover letter stated that IDPH is waiting for ISU as the "licensee" to review the data and issue to IDPH a written synopsis of ISU's conclusions. IDPH will then issue a written determination of the status of the site. There were no discussions during 2000 between DOE, ISU and IDPH concerning this site.

5.7.4 Fire Service Institute Training Area

Discussions between DOE, ISU and IDPH concerning the Fire Service Institute Training Area continued in 2000. The site is on campus, under ISU control and responsibility. It is on the northeast corner of the intersection of Harber Road and the Chicago Northwestern Railroad. See WebPages www.external.ameslab.gov/common/amesmap.html. Click on Iowa State University Campus Map. ISU conducted a radiological survey of the site in April 1995 and found seven small areas of activity above background levels. The University fenced those areas to minimize human contact. Soil samples collected in July and October 1995 detected some thorium contamination. The sample ranged from 14.9 to 662.9 pCi/g Th-232. Limited non-radiological sampling was also conducted. The samples were analyzed for TCLP metals,

volatiles and pesticides. The results were within the regulatory limits. ISU issued a summary of their site sampling activities on November 22, 1996.

Chase Environmental Group (CEG), Inc, under contract with ISU, conducted radiological surveys and soil sampling November 6-11, 1997. The survey was done to determine the radionuclides involved, and to determine the depth of contamination. The Survey Report was published May 7, 1998. CEG finished remediation activities in August 1999. The site was cleaned up to the standards set by the Iowa Department of Public Health (IDPH). As a result of this remedial activity, 250 B-25 boxes representing approximately 24,000 cubic feet of thorium-contaminated soil was generated. In December of 2000 225 B-25 boxes were shipped to Texas Ecologist in Robstown, Texas for disposal. The waste was shipped as non-hazardous industrial waste (soil contained less than 51pCi/gm thorium). The remaining boxes (25) are in storage pending disposal. Due to the possibility of some of the thorium contamination being linked to former Atomic Energy Commission activities at Ames Laboratory, DOE is implicated as one of the potential responsible parties. DOE issued a grant to ISU for $350k in September of 2000 for the clean up and disposal of contaminated soil from the Fire Service Institute Training Area.

6.0 ENVIRONMENTAL NON-RADIOLOGICAL PROGRAM

6.1 National Pollutant Discharge Elimination System (NPDES) Data

Ames Laboratory does not have or need any NPDES permits since there are no direct sanitary discharges or surface runoff to the environment. The Laboratory discharges all liquid wastes to the ISU sanitary sewer system, which discharges into the City of Ames sanitary sewer system. The Laboratory's wastewater is included in the University's pretreatment agreement with the City of Ames. Since the DOE buildings are on ISU land, ISU holds any necessary storm water permits. See section 3.7.

6.2 Other Emissions Monitoring

It is the policy of Iowa DNR to exempt laboratory fume hoods from permitting and monitoring. The DNR issued an official ruling for Ames Laboratory on July 18, 1994 stating that no permitting and no monitoring are required for the 144 fume hoods and 34 associated exhausts. See Correspondence in APPENDIX B. The DNR issued construction permits for the Laboratory's paint booth and sand blaster and exemptions for a graphics paint booth and graphite lathe. See Correspondences in APPENDIX B.

6.3 Continuous Release Reporting

Ames Laboratory had no continuous release sources in 2000.

6.4 Environmental Occurrences

The Laboratory submitted a "Notification of PCB Activity" form to the U.S. Environmental Protection Agency and the Iowa Department of Natural Resources on March 16, 1998 for a sump clean out in Wilhelm Hall. The sump was determined to contain sediments that were contaminated with PCB's and radioactivity. Contents of the sump were removed and containerized in September 1998. The sump has been cleaned per 40 CFR 761. The PCB Low Level Waste was shipped to Envirocare of Utah for burial.

The Laboratory reported one release to the IDNR on March 29, 1999. This release consisted of water based hydraulic oil. During elevator shaft maintenance activities, in the Metals Development Building, oil was found in the soil. All contaminated soil was collected and properly disposed. All necessary reporting was submitted to the IDNR. No further action was required.

6.5 SARA Title III Reporting Requirements

There were no chemicals stocked at Ames Laboratory at or above the threshold planning quantity (TPQ) in 2000. The Laboratory was in compliance with Executive Order 12856 (Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements) in 2000. If a chemical is found to exceed the TPQ, the Laboratory will submit a Tier II report to the appropriate agencies.

7.0 GROUNDWATER MONITORING AND PROTECTION

The Laboratory does not routinely monitor groundwater. There are no Ames Laboratory activities that pose a hazard to groundwater or surface water. The Laboratory has no underground storage tanks.

On the main campus, the groundwater-monitoring network consists of five wells. One well was up gradient, for background data. Four wells were down gradient (east-southeast) of the Laboratory's main campus facilities. Two of the down gradient wells belong to ISU. The ISU wells are farther down gradient than the DOE owned wells, and they are screened into a deeper aquifer. The combination of shallow wells is an attempt to detect both floating and sinking contaminants. Currently Iowa State University is not required to monitor the groundwater on the main campus.

The CDS was monitored as prescribed by the IDNR and IDPH. Only the CDS wells were sampled in 2000.

8.0 QUALITY ASSURANCE PROGRAMS

Radioactive sources and solutions that are used for calibration of radiation detection instrumentation are obtained with quantitative calibration that is directly traceable to the National Institute of Standards and Technology. Ames Laboratory quality assurance relied on established U.S. EPA, IDNR, IDPH, and DOE regulations, standards and methods. This applied to both radioactive and non-radioactive environmental sampling and analyses.

The Laboratory also participated in the DOE Environmental Measurements Laboratory's Quality Assessment Program (QAP). The program included testing of water, pulverized vegetation and air filter samples. Elements of the program involving measurement of radioactivity were the responsibility of the Environment, Safety, Health and Assurance office.

Ames Laboratory's air quality assurance procedure consisted of maintaining an exhaust hood inventory, maintaining a radiological material balance, and tracking chemicals, and waste collection and management. These measures determine if we have a source that needs monitoring or permitting, in accordance with IDNR guidance. The Laboratory used the COMPLY modeling program to produce the annual NESHAP report.

The Safe Drinking Water Act establishes drinking water quality standards, wellhead protection requirements, monitoring requirements, treatment standards, and the regulation of underground injection activities. Drinking water for Ames Laboratory was supplied by ISU, which obtains its water from the City of Ames public water system. The Laboratory has a Policy for Monitoring Lead. Potable water at Ames facilities was monitored in 2000. Results were below the regulatory levels. See Table 3-1 for analytical results.

Ames Laboratory did not have any regulated point source discharges in 2000. Neither the Laboratory nor ISU had a NPDES wastewater permit. The City of Ames has a NPDES permit. The City of Ames had an agreement for wastewater pre-treatment with ISU, which included Ames Laboratory wastewater. Both the City of Ames and the University sampled ISU wastewater effluent using EPA protocols and methods. Since existing DOE buildings are on land leased from ISU, the ISU storm water permit covered Ames Laboratory activities.

Sampling methodologies, containerization, and analyses complied with EPA and receiving facility standards. Sample shipments and handling complied with standards of the U.S. Department of Transportation and the International Air Transporters Association.

Ames Laboratory ESH&A revised its instrument calibration policy in 1993 to ensure the accuracy of measurements made at the Laboratory. This policy was followed in 2000. Equipment enrolled in the calibration program was and is marked by stickers. New equipment is calibrated by the manufactures and checked by health physics personnel.

In 2000, the Laboratory followed its Readiness Review (RR) Procedure for new or significantly modified research activities. This procedure is for risk identification, categorization, and ES&H review of activities. Another purpose of the RR is to prevent and/or control releases of hazardous materials to the environment. It was developed to ensure that an appropriate level of rigor, commensurate to the risk associated with an activity's hazards, is applied to the

activity's ES&H review. Thirty-two readiness reviews were closed in 2000. Approved activities are reviewed every five years.

9.0 REFERENCES

1. Ames City Manager's Office , demographic information.
2. Ames Laboratory Site Environmental Report, 1998.
3. City of Ames and ISU Pretreatment Agreements #3593-3 and #4093-3.
4. DOE Order 231.1, "Environment, Safety and Health Reporting."
5. DOE Order 5400.5, "Radiation Protection of the Public and the Environment."
6. DOE Order 5633.3B, "Control and Accountability of Nuclear Materials."
7. Executive Order 12843, "Procurement Requirements and Policies for Ozone Depleting Substances."
8. Executive Order 12856, "Federal Compliance with Right to Know Laws and Pollution Prevention Requirements."
9. Executive Order 13101, "Federal Acquisition, Recycling and Waste Prevention."
10. Executive Order 12969, "Federal Acquisition, Community Right to Know, Toxic Chemical Release Reporting."
11. Executive Order 12088, "Federal Compliance with Pollution Control Standards."
12. Executive Order 12580, Sections 8 and 11, "Superfund Implementation."
13. Characterization Report for the Ames Laboratory Chemical Disposal Site, Iowa Sate University, September 1998.
14. IATA Dangerous Goods Regulations
15. Iowa Administration Code, Rule 567, Chapters 20-24 and 28, "Air Quality."
16. Iowa Administration Code, Rule 567, Chapter 39, "Requirements for Properly Plugging Abandoned Wells."
17. Iowa Administration Code, Rule 567, Chapter 60, "Wastewater Treatment and Disposal: Definitions, Rules of Practice."
18. Iowa Administration Code, Rule 567, Chapter 61, "Water Quality Standards."
19. Iowa Administration Code, Rule 567, Chapter 100, 101, 109, 118, 119, "Solid Waste Management and Disposal."
20. Iowa Administration Code, Rule 567, Chapter 131, "Notification of Hazardous Conditions."

21. Iowa Administration Code, Rule 567, Chapter 133, “Determining Cleanup Actions and Responsible Parties.”

22. Iowa Administration Code, Rule 567, Chapter 140 and 141, “Hazardous Waste.”

23. 10 CFR Part 1021, “National Environmental Policy Act Implementation Procedures.”

24. 10 CFR Part 835, “Occupational Radiation Protection.”

25. 29 CFR Part 1910.120, “Hazardous Waste Operations and Emergency Response.”

26. 40 CFR Part 63, “National Emission Standards for Hazardous Air Pollutants for Source Categories.”

27. 40 CFR Part 82, “Protection of Stratospheric Ozone.”

28. 40 CFR Part 112, “Oil Prevention; Spill Prevention, Controls and Countermeasures.”

29. 40 CFR Part 131, “Water Quality Standards.”

30. 40 CFR Part 141, “National Primary Drinking Water Regulations.”

31. 40 CFR Parts 260-264 (subpart S), 265 and 268, “Hazardous Waste Implementing Rules.”

32. 40 CFR Part 279, “Standards for the Management of Used Oil.”

33. 40 CFR Part 300, “National Oil and Hazardous Substances Pollution Contingency Plan.”

34. 40 CFR Part 302, “Designation, Reportable Quantities and Notification.”

35. 40 CFR Part 355, “Emergency Planning and Notification.”

36. 40 CFR Part 761, “Polychlorinated Biphenyls (PCBs) Manufacturing, Processing Distribution in Commerence, and Use Prohibitions.”

37. Consent Agreement and Consent Order, executed February 27th, 1996.

10.0 LIST OF ACRONYMS

ASC: Applied Sciences Complex of Iowa State University.

Bq: Becquerel, one disintegration per second.

CAA: Clean Air Act and Amendments.

CAG: Community Advisory Group for Ames Laboratory environmental activities.

CDS: closed Chemical Disposal Site at the ASC.

CERCLA: Comprehensive Environmental Response, Compensation and Liability Act.

CESQG: conditionally exempt small quantity generator.

CFR: Code of Federal Regulations.

CG: concentration guide, DOE derived.

CH: Chicago Operations Office of the U.S. Department of Energy.

Ci: Curie, 3.7E10 disintegration's per second.

CWA: Clean Water Act.

CX: categorical exclusion, a class of activities determined to have no environmental impact.

DOE: U.S. Department of Energy.

EA: environmental assessment.

EIS: environmental impact statement.

EPA: U.S. Environmental Protection Agency.

EPCRA: Emergency Planning and Community Right to Know Act.

ESA: Endangered Species Act.

ESH&A: Environment, Safety, Health and Assurance office of Ames Laboratory.

FFCA: Federal Facilities Compliance Act.

FIFRA: Federal Insecticide, Fungicide and Rodenticide Act.

FS: feasibility study.

FSP: field sampling plan.

g: grams

GOCO: a government owned, contractor operated facility.

HEPA: high efficiency particulate air, a filter element or filtration system.

HQ: Headquarters of U.S. Department of Energy.

IAC: Iowa Administration Code.

IDNR: Iowa Department of Natural Resources.

IDPH: Iowa Department of Public Health.

IPRT: Institute for Physical Research and Technology, ISU.

ISU: Iowa State University.

IWS: inactive waste site.

LDR: land disposal restriction.

LQG: large quantity generator.

MCL: maximum contaminant level.

mg/L: milligrams per liter; equivalent to ppm.

mrem: millirem.

mSv: millisievert, 10^{-3} Sieverts.

NEPA: National Environmental Policy Act.

NESHAP: National Emission Standards for Hazardous Air Pollutants.

NHPA: National Historic Preservation Act.

NOV: notice of violation.

NPDES: National Pollutant Discharge Elimination System.

NRC: Nuclear Regulatory Commission.

ODS: ozone depleting substance.

PCB: polychlorinated biphenols.

pCi: picocurie, 10^{-12} Curies.

PIDS: performance indicator database system.

QA: quality assurance.

QAP: Quality Assessment Program, DOE.

RCRA: Resource Conservation Recovery Act.

rem: Roentgen equivalent man, radiation dose.

RESRAD: residual radiation model for sites.

RI: remedial investigation.

RPP: Radiological Protection Plan, for Ames Laboratory.

SARA: Superfund Amendments and Reauthorization Act.

SDWA: Safe Drinking Water Act.

SER: annual Site Environmental Report, for Ames Laboratory.

TASF: Technical and Administrative Support Facility, the Ames Laboratory office building.

TCLP: Toxicity Characteristic Leaching Procedure

TPQ: threshold-planning quantity.

TRU: transuranic waste.

TSCA: Toxic Substances Control Act.

WAS: work authorization system of Ames Laboratory.

11.0 REPORT DISTRIBUTION

Organization

Ms. Roxanne Purucker, Acting Manager
Ames Group
DOE Chicago Operations Office
9800 South Cass Avenue
Argonne, IL 60439
Roxanne.Purucker@ch.doe.gov

Mr. Rollow Thomas, Director
Office of Operating Experience Analysis & Feedback
Department of Energy, EH-33/FORS
1000 Independence Avenue, S.W.
Washington, DC 20585
Tom.rollow@hq.doe.gov

Mr. David Stadler, Deputy Assistant Secretary, Oversight
Department of Energy, EH-2/270
19901 Germantown Road
Germantown, MD 208874-1290
David.stadler@eh.doe.gov

Mr. Peter Rosen, Associate Director
Office of High Energy and Nuclear Physics
Department of Energy, SC-20/GTN
19901 Germantown Road
Germantown, MD 208874-1290
Peter.rosen@science.doe.gov

Ms. Van Nguyen, Director
Environment, Safety and Health, Office of Science
Department of Energy, SC-83/GTN
19901 Germantown Road
Germantown, MD 208874-1290
Van.nguyen@science.doe.gov

Mr. Michael Flannigan, Director
Safety and Technical Services
DOE Chicago Operations Office
9800 South Cass Avenue
Argonne, IL 60439
Michael.flannigan@ch.doe.gov

Mr. Steven Silbergleid, Chief Counsel
Legal Services Group
DOE Chicago Operations Office
9800 South Cass Avenue
Argonne, IL 60439
Steven.silbergleid@ch.doe.gov

Mr. Alan Handwerker, Supervisory General Attorney
Office of General Law
DOE Chicago Operations Office
9800 South Cass Avenue
Argonne, IL 60439
Alan.handwerker@ch.doe.gov

Mr. Glenn Podonsky, Director
Office of Independent Oversight & Performance
Department of Energy, C-403
19901 Germantown Road
Germantown, MD 20870
Glenn.podonsky@hq.doe.gov

Mr. Charlie Billups, Senior technical Advisor for Environmental, Safety & Health
Department of Energy
Office of Science, SC-80/GTN
19901 Germantown Road
Germantown, MD 20870
Charles.billups@science.doe.gov

Mr. Iran Thomas, Deputy Associate Director, Basic Energy Sciences
Department of Energy
Office of Basic Energy Sciences, SC-13/GTN
19901 Germantown Road
Germantown, MD 20870
Iran.thomas@science.doe.gov

Mr. Richard Day, General Engineer
Department of Energy
Office of Price-Anderson Enforcement, EH-10/270CC
19901 Germantown Road
Germantown, MD 20870
Richard.day@hq.doe.gov

Mr. Ross Natoli, Environmental Protection Specialist
Department of Energy
Air, Water and Radiation Division, EH-412/FORSTL
1000 Independence, SW
Washington, DC 20585
Ross.natoli@hq.doe.gov

Mr. Walter L. Warnick, Director
Office of Scientific and Technical Information
U.S. Department of Energy, OSTI/GTN
175 Oak Ridge Turnpike
P.O. Box 62
Oak Ridge, TN 37831
Walt.warnick@science.doe.gov

Mrs. Kate Sordelet
Ames Laboratory Technical Information
Iowa State University
111 TASF
Ames, IA 50011-3400
Sordeletk@ameslab.gov

Mr. Gene Gunn, Chief
FFSESUPR
USEPA Region VII
901 North Fifth Street
Kansas City, KS 66101
Gunn.gene@epa.gov

Mr. Craig Bernstein
FFSESUPR
EPA, Region VII
901 North Fifth Street
Kansas City, KS 66101
Bernstein.craig@epa.gov

Mr. William A. Spratlin
Director, Air and Toxics Division
USEPA Region VII
901 North 5th Street
Kansas City, KS 66101
Spratlin.william@epa.gov

Ms. Eleanor D. Thornton
USEPA
1200 Pennsylvania Avenue, NW
Ariel Rios Building
Mail stop 6608J
Washington, DC 20460
Thorton.eleanord@epa.gov

Mr. Don Flater
Bureau of Radiological Health
Iowa Department of Public Health
Lucas State Office Building
Des Moines, IA 50319-0075

Mr. Alan Stokes
DNR Environmental Protection Division
900 East Grand Avenue
Des Moines, IA 50319-0034

Mr. David Inyang, Director
Environmental Health and Safety
118 Agronomy Laboratory
Iowa State University
Ames, IA 50011
Adinyan@iastate.edu

Ms. Johnie Hammond
Senate Chambers
State House
Des Moines, IA 50319
Johnie_hammond@legis.state.ia.us

Mr. Larry McKibben
Senate Chambers
State House
Des Moines, IA 50319
Larry_mckibben@legis.state.ia.us

Ms. Jane Greiman
House Chambers
State House
Des Moines, IA 50319
Jane_greimann@legis.state.ia.us

Mr. Dennis Parmenter
House Chambers
State House
Des Moines, IA 50319
Dennis_parmenter@legis.state.ia.us

Ms. Teresa Garman
House Chambers
State House
Des Moines, IA 50319
Teresa_garman@legis.state.ia.us

Representative Mr. Leonard Boswell
1029 Longworth House Office Building
Washington, DC 20515
Rep.boswell.ia03@mail.house.gov

Ames Laboratory Community Advisory Group:

Mr. Robert (Toby) Ewing

Ms. Jean Day Lassila

Mr. Joe Lynch

Ames Laboratory Management and Discipline Specialists:

Director, Mr. Tom Barton
Barton@ameslab.gov

Deputy Director, Mr. Bruce Harmon
Harmon@ameslab.gov

Chief Operations Officer, Mr. Mark Murphy
Murphy@ameslab.gov

Division Director S & T, Mr. David Hoffman
Hoffman@ameslab.gov

Information Officer, Mr. Steve Karsjen
Karsjen@ameslab.gov

ESH&A Manager, Mr. Tom Wessels
Wessels@ameslab.gov

Radiation Safety Officer, Jay Beckel
jbeckel@ameslab.gov

Industrial Hygiene, Mr. James Withers, CIH
Withers@ameslab.gov

Fire and Plant Protection, Mr. G.P. Jones
Jonesgp@ameslab.gov

Industrial Safety, Mr. Shawn Nelson
Nelsons@ameslab.gov

Environmental Specialist, Mr. Dan Kayser
Kayser@ameslab.gov

APPENDIX A

Chemical Disposal Site Correspondences

1) Letter to IDPH requesting release of the Chemical Disposal Site, September 30, 1998.

2) Letter from IDPH granting “unrestricted” release of the chemical Disposal Site, October 15, 1998.

3) Letter from IDPH to Edward J. Stanek, II, Ph.D., status of Chemical Disposal Site, October 16, 1998.

4) Letter from ISU to DOE-Ames Group, October 22, 1998.

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Environmental Health and Safety
118 Agronomy Lab
Ames, Iowa 50011-3200
515 294-5359
FAX 515 294-9357

September 30, 1998

Mr. Donald A. Flater
Chief, Bureau of Radiological Health
Iowa Department of Public Health
Lucas State Office Building
Des Moines, IA 50319-0075

Dear Mr. Flater:

Enclosed are 3 copies of the "Characterization Report for the Ames Laboratory Chemical Disposal Site – Iowa State University", dated September, 1998. This report reflects the latest work at the Chemical Disposal Site (CDS) which evolved from our meeting with IDPH on August 28, 1998. At that meeting we made the decision to remove any remaining surface soil radiation levels that were more than twice background. That work was accomplished and the affected areas were resurveyed on 9-1-98 to confirm that they were at background levels (IDPH personnel were present for the survey).

As a result of the above efforts, we believe the CDS site now meets the criteria for unrestricted release. Moreover, the Jones/McMahon study of groundwater movement at the CDS has been released, and confirms the assessment that the underground water plume has reached a steady state at the site. The down-gradient concentrations are expected to decrease over the coming years with the judgement that there is no potential threat to either Squaw Creek or the public water supply.

Therefore, after IDPH review of the enclosed report, Iowa State University is requesting consideration of the following action:

1. Release of the CDS on an unrestricted basis.
2. Reduce the groundwater sampling frequency to once per year for the remainder of the 5 year schedule.
3. Allow closure of monitoring wells MW-9A and MW-9B because of their deteriorating condition. (This has already been verbally granted by IDPH but we would appreciate having this in writing).

We appreciate the assistance and cooperation of the IDPH on the CDS project and look forward to a successful completion. We have enclosed enough copies of the "CDS Characterization Report" so you can provide them to the EPA offices involved in this project. When we hear back from the IDPH, we will provide appropriate copies to the Ames Lab, DOE and IDNR.

Sincerely,

Emery E. Sobottka

Emery E. Sobottka
Director

enclosure

cc Warren Madden
Paul Tanaka

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STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF PUBLIC HEALTH
CHRISTOPHER G. ATCHISON, DIRECTOR

October 15, 1998

Emery Sobottka
Iowa State University
118 Agronomy Laboratory
Ames, Iowa 50011-3200

Dear Mr. Sobottka:

This correspondence refers to the "Characterization Report for the Ames Laboratory Chemical Disposal Site—Iowa State University." You submitted that report to us under cover of your letter dated September 30, 1998.

We have read and reviewed the report and analyzed the data. We agree with your conclusions and recommendations.

The site, known as the Ames Laboratory Chemical Disposal Site, meets the standards for unrestricted use. Additionally, we concur with your recommendation that the groundwater sampling frequency be reduced to annual. This sampling will continue until 2002.

If you have any questions or comments, please call Dan McGhee or me at (515)281-7007.

Sincerely,

Donald A. Flater, Chief
Bureau of Radiological Health

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STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF PUBLIC HEALTH
CHRISTOPHER G. ATCHISON, DIRECTOR

October 16, 1998

Edward J. Stanek, II, Ph.D.
2015 Grand Avenue
Des Moines, Iowa 50312

Dear Dr. Stanek:

This correspondence refers to the chemical Disposal Site (CDS) in Ames, Iowa. This area had been used as a disposal site by Ames Laboratory, a contractor for the U.S. Department of Energy (DOE). As you know, the DOE remediated this site in 1994. They then published the results and made recommendations for the future use of the land.

The Iowa Code designates the Iowa Dept. of Public Health (IDPH) as the state's radiation control agency. Additionally, Iowa State University (ISU) holds an Iowa Radioactive Materials license. As a result, IDPH became involved, as an overseeing agency, with the CDS project in 1994.

In August 1996, and again in December 1997, IDPH went on record with DOE saying that it could neither agree with nor concur in the data or the recommendations as presented. Our stance was that a complete characterization of the CDS had not been conducted and that, therefore, the conclusions came from data that had no statistical relevance.

In the spring of 1997 ISU initiated a complete characterization study of the CDS. We have kept you apprised of the progress of that project.

On Friday, October 9, 1998, ISU submitted its final report. In that report, ISU concludes that the CDS meets the standards for unrestricted use and recommends that annual samples from the groundwater monitoring wells be continued, on an annual basis, until 2002 to confirm the results of the study. The U.S. Environmental Protection Agency accepts this monitoring regimen.

We have reviewed the ISU data and report. We agree with the conclusions and the recommendations. We have issued a letter to ISU stating that the CDS meets the standards for unrestricted use. That letter will also contain our concurrence to reduce the groundwater monitoring frequency to annually and to continue this monitoring until 2002.

If you have any questions or comments, please do not hesitate to contact me.

Sincerely,

Donald A. Flater, Chief
Bureau of Radiological Health
515-281-3478
515-242-6284 – FAX
dflater@idph.state.ia.us

DAF/lr

cc: Emery Sobottka, ISU
Joe Obr, IDNR

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IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Environmental Health and Safety
118 Agronomy Lab
Ames, Iowa 50011-3200
515 294-5359
FAX 515 294-9357

October 22, 1998

Mr. James Buchar
Ames Group
Department of Energy
Chicago Operations Office
9800 South Cass Ave
Argonne, IL 60439

Dear Mr. Buchar:

The additional sampling and testing that we have been conducting at the Ames Laboratory Chemical Disposal Site (CDS) has culminated in the Iowa Department of Public Health (IDPH) granting ISU unconditional release of the CDS site. In addition, the IDPH has also granted our request to reduce groundwater well water sampling frequency from one per quarter to once per year for the remainder of the sampling period (until year 2002). Enclosed are documents which describe CDS activities:

1. The final Characterization Report for the CDS.
2. A letter from ISU to IDPH (dated September 30, 1998) which requests unrestricted closure and reduces groundwater sampling frequency at the CDS.
3. Two letters from IDPH (dated October 15, 1998 and October 16, 1998) which grant ISU unrestricted release of the CDS and reduced groundwater sampling at the CDS until the year 2002.

After you have had the opportunity to review these documents I would like to continue our discussion about coordinating a joint press release. A lot of people, departments, state and federal agencies, etc., have had a hand in completing this successful project and we may want to consider some recognition of that fact.

Sincerely,

Emery E. Sobottka

Emery E. Sobottka
Director

enclosure

cc Tom Barton, Ames Lab
Tom Wessels, Ames Lab
Joe Obr, IDNR
Warren Madden (#3 enclosure only)
Paul Tanaka (#3 enclosure only)

OCT 22 1998

APPENDIX B

Air Permit Correspondences

1) Letter from IDNR exempting laboratory fume hoods from permitting, July 18, 1994.

2) Letter from Jacobs Engineering Group Inc. exempting graphics paint spray booth from permitting, July 16, 1997.

3) Letter from IDNR exempting graphite lathe hood exhaust from permitting, February 6, 1998.

5) Annual Radionuclide Air Emissions Report for CY 2000, as required by 40 CFR Part 61.94,

STATE OF IOWA

COPY

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

July 18, 1994

CERTIFIED

Ms. Lowell K. Mathison:
Environment, Safety & Health Group
Ames laboratory
Iowa State University
115 Spedding
Ames, IA 50011

Dear Mr. Mathison,

This letter is to inform you that the 144 chemical fume hoods and associated 34 exhaust points described in your letters dated April 14th and June 28th of 1994 are exempted from both air construction permit and Title V permitting provisions.

If you have any questions regarding the above, please call me at (515) 281-8852.

Sincerely,

Peter Hamlin, chief
Air Quality Bureau

JACOBS ENGINEERING GROUP INC.

8208 MELROSE DRIVE, SUITE 210, LENEXA, KANSAS 66214
TELEPHONE (913) 492-9218 • FAX (913) 492-6198

July 16, 1997

Mr. Walter P. Waters
Iowa State University
Ames Laboratory
G40 TASF
Ames, IA 50011

Mr. Waters,

Jacobs Engineering has been contracted by the Iowa Department of Natural Resources to review Iowa State University's application for an air construction permit for a paint spray booth (S23). The project number assigned is 96-456.

According to 567 Iowa Administrative Code (IAC) 22.8(1)c, the paint spray booth is exempt from the permitting process if more than one gallon per day but less than three gallons per day of spray material is sprayed. The emissions must be vented through a stack that is at least 22 feet tall and daily records of the material sprayed must be kept for eighteen (18) months from the date to which the records apply. In order formally be exempt from the permitting process, a written statement must be submitted according to 567 IAC 22.8(1)e which reads:
"I certify that all paint booths at the facility and listed below are in compliance with all applicable requirements of rule 567 IAC 22.8(1). I understand this equipment shall be deemed permitted under the terms of 567 IAC 22.8(1) only if all applicable requirements of 567 IAC 22.8(1) are met. This certification is based on information and belief formed after reasonable inquiry; the statements and information in the document are true, accurate, and complete."
This certification must be signed by, for municipal, state, county, or other public facilities, the principal executive officer or the ranking elected official.

This certification must be submitted to:

Mr. Pete Hamlin, Air Quality Chief
Iowa Department of Natural Resources
7900 Hickman Road, Suite 1
Urbandale, IA 50322

Sincerely,

Barbara Seuferling

Barbara Seuferling
Jacobs Engineering Group, Inc.

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7/16/97

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

COPY

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

CERTIFIED MAIL

February 6, 1998

ATTN: Walter P. Waters
Ames Laboratory
Iowa State University
Ames, Iowa 50011-3020

RE: Construction permit exemption request for graphite lathe hood exhaust
Facility No. 85-01-057

Dear Mr. Waters:

Your request for a construction permit exemption for the above referenced source has been received. Based on the information you have provided your request has been approved. You should be aware that any exemption you qualify for does not establish any federally enforceable emission limits. This means that when determining applicability for the various programs you may be subject to, our bureau would assume the maximum potential emissions from this source.

If you have any questions, you may contact me at the address or telephone numbers listed below.

Sincerely,

Clark W. Ott
Environmental Specialist - Compliance Assistance Section
Air Quality Bureau
515-281-4899

cc: FO5, w/ attachments

ames lab.doc

AMES LABORATORY

June 28, 2001

William A. Spratlin, Director, Air and Toxics Division
U.S. Environmental Protection Agency, Region VII
901 North 5th Street
Kansas City, KS 66101

SUBJECT: Annual Radionuclide Air Emissions Report

Dear Mr. Spratlin:

Enclosed for your records, is a completed Air Emissions Annual Report Form (40 CFR Part 61.94) for the calendar year 2000 for Ames Laboratory at Iowa State University.

As indicated on the form, the Ames Laboratory did not have any operation or activity in 2000 that produced radioactive air emissions, which could have exposed a member of the public.

If you have any questions, please contact Mr. Jay Beckel or myself at 515-294-2153.

Previous year reports may be viewed in the "Annual Site Environmental Report" on the Laboratory's web page at http://www.external.ameslab.gov/esha/ESH&A_Documents/reportlist.html.

Sincerely,

Dan Kayser

Dan Kayser
Environmental Specialist

Enclosures

cc: Ms. Eleanor D. Thorton, USEPA
Mike Saar, DOE-CH
Tom Barton, Director Ames Laboratory

U.S. Department of Energy
Air Emissions Annual Report
Calendar Year 2000

SECTION I

Facility Information

Site Name: Ames Laboratory, Iowa State University

Operations Office: Chicago Operations

Address: 9800 South Cass Avenue
Argonne, IL 60439

Contact: Mike Saar Phone: 630-252-2245

Site Operator: Iowa State University

Site Address: G40 TASF, Iowa State University
Ames, IA 50011

Contact: Dan Kayser Phone: (515) 294-2153

Site Description:

The Ames Laboratory is located on the campus of Iowa State University (ISU) in Ames, Iowa. The Ames Laboratory is operated by ISU for the DOE under contract No. W-7405-ENG-82. There are nine buildings owned by the DOE. The Ames Laboratory conducts basic and intermediate applied research in physical, mathematical, and engineering sciences that underlie energy technologies and other areas of national importance.

SECTION II

Methods for Dose Assessment/Air Emissions Data

Methods used for evaluating doses from the air emissions.

There were no activities involving radionuclides at the Laboratory in CY 2000. Consequently there were no radioactive air emissions and no exposures to the general public. The COMPLY program was used assuming a small release (1E-12 Ci) of each radionuclide kept in our materials balance area. In this very unlikely event, the effective dose to the nearest receptor site at 750 meters would be 1.08E-8 mrem/yr.

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. (See, 18 U.S.C. 1001).

Name: Tom Barton Title: Director, Ames Laboratory

Signature:  Date: 6/29/01

APPENDIX C

Inactive Waste Sites Correspondences

1) Letter from IDPH, Closure of nine waste sites, January 11, 1996.

2) Letter from DOE-CH, Regarding the Iowa State College Dump Site, April 20, 1999.

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF PUBLIC HEALTH
CHRISTOPHER G. ATCHISON, DIRECTOR

January 11, 1996

Warren R. Madden
Vice President for Business and Finance
Iowa State University
125 Beardshear Hall
Ames, Iowa 50011-2038

Dear Mr. Madden:

Reference is made to your letter of January 5, 1996 in which you request our concurrence on the status of nine inactive waste sites which we possibly contaminated with radioactive materials as a result of the operation of Ames Laboratory as a DOE contractor in the past. Listed below are the sites by name and our conclusions as to the status of the site regarding closure.

1. Ames Old Waste Water Treatment Facility (WWTF): Met criteria for unrestricted use per Department letters to the city of Ames dated June 16, 1994 and February 17, 1995.

2. Grand Avenue Under Pass: Based on the data provided by DOE, ISU and data collected by this Department this area meets the criteria for unrestricted use. In fact, there is information which indicates that this area never was subjected to the spreading of contaminated sludge from the WWTF.

3. Ames Municipal Cemetery: Based on the date provided by DOE, ISU and data collected by this Department this area meets the criteria for unrestricted use. In fact, there is information which indicates that this area never was subjected to the spreading of contaminated sludge from the WWTF.

4. Applied Science Center: Based on the data provided by DOE, ISU and data collected by this Department, this area meets the criteria for unrestricted use.

5. Block House Area : Based on the data provided by DOE, ISU and data collected by this Department, this area meets the criteria for unrestricted use.

6. Little Ankeny Debris Site: Based on the data provided by DOE, ISU and data collected by this Department, this area meets the criteria for unrestricted use.

7. Annex I: Based on the data provided by DOE, ISU and data collected by this Department, this area can be used as it is now, in perpetuity, without public health concerns. However, if the site is developed for any other purpose additional surveys or sampling will be necessary to confirm that if residual radioactive material exists it is not in amounts which could be of public health concern during the developmental process.

8. Annex II: : Based on the data provided by DOE, ISU and data collected by this Department, this area can be used as it is now, in perpetuity, without public health concerns. However, if the site is developed for any other purpose additional surveys or sampling will be necessary to confirm that if residual radioactive material exists it is not in amounts which could be of public health concern during the developmental process.

LUCAS STATE OFFICE BUILDING / DES MOINES, IOWA 50319-0075 / 515-281-5787
FAX # (515) 281-4958 / TDD-DEAF SERVICES #(515) 242-6156

9. Ames Municipal Airport: Based on the data provided by DOE, ISU and data collected by this Department, this area can be used as it is now, in perpetuity, without public health concerns. However, if the site is developed for any other purpose additional surveys or sampling will be necessary to confirm that if residual radioactive material exists it is not in amounts which could be of public health concern during the developmental process.

Based on the above, it is my opinion that we concur with the University's decision to bring the nine sites to closure with the special provisions placed on Annex I, II and the Airport. I would like to take this opportunity to thank you, the ISU Staff and the Ames Laboratory Staff who have assisted in working through the long laborious process of reading the conclusions. We certainly look forward to working with all of you in the future. If you have question regarding the above, please do not hesitate to contact me.

Sincerely,

Donald A. Flater, Chief
Bureau of Radiological Health
(515) 281-3478

cc: E. Sobottka, ISU
Tom Newman, City of Ames
Dr. Tom Barton, Ames Laboratory

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Department of Energy
Chicago Operations Office
9800 South Cass Avenue
Argonne, Illinois 60439

April 20, 1999

Dr. Aniefiok D. Inyang, Director
Environmental Health and Safety
118 Agronomy Laboratory
Iowa State University
Ames, Iowa 50011-3200

Dear Dr. Inyang:

SUBJECT: IOWA STATE COLLEGE DUMP SITE

References: 1. Letter, Taboas to Sobottka, dated January 30, 1996
2. Letter, Sobottka to Taboas, dated February 28, 1996

It has recently been brought to my attention that an old issue remains open relative to the Iowa State's College Dump Site. As I can best determine the issue arose when the Department of Energy (DOE) in reviewing the University's "Review and Assessment of the Former Iowa State College Dump Site" report provided some comments (Reference 1) for the University's consideration. As indicated in Reference 2, the University adopted most of the suggested changes. However, one statement as made regarding the availability of information about the disposal of beakers and containers at the site, which raised a concern with your predecessor. As can be seen from Reference 2, Mr. Sobottka was not aware of and did not have any evidence of anything other than uranium being disposed of at the site. Mr. Sobottka's letter requested that DOE make available any information we may have as to the origin or type of materials disposed of at the site and how we became aware of this information.

In trying to respond to this open issue, we have conducted a review internally of the statement previously made in our Reference 1 letter and we are not able to provide any documentation as requested. Our statement at the time was based on informal discussion with an Ames Laboratory employee (now retired) and a cursory review, over time, of some College Dump Site related documents, none of which were ever in our possession.

It is our position that without having any specific knowledge or records, other than as mentioned above, relative to the College Dump Site, we withdraw the comment in question and recommend that the report be finalized and the issue closed.

Sincerely,

James A. Buchar
Ames Group Manager

Enclosures:
Reference Letters

APPENDIX D

EPA Correspondences

1) EPA letter (NOV's), April 6, 1999.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
726 MINNESOTA AVENUE
KANSAS CITY, KANSAS 66101

APR 0 6 1999

CERTIFIED MAIL
Return Receipt Requested
Article Number: P 165 405 793

Dan Kayser, Environmental Specialist
Ames Laboratory
G40 TASF
Ames, IA 50011

Dear Mr. Kayser:

RE: Ames Laboratory #3
Ames, IA
RCRA I.D. No. IA6890008950

On January 19-20, 1999, a representative of the U. S. Environmental Protection Agency (EPA) inspected your facility. The inspection was conducted under the authority of Section 3007 of the Resource Conservation and Recovery Act (RCRA). A copy of that inspection report is enclosed.

A Notice of Violation (NOV) was issued to your company during the inspection. I have reviewed your February 1, 1999, response to the NOV and determined that it adequately addresses the violations listed in the NOV. Therefore, no further submittals are required at this time. Please note that EPA reserves its right to pursue appropriate enforcement actions, including penalties, for violations discovered as a result of this inspection.

I would like to remind you that your facility is responsible for maintaining compliance with all applicable hazardous waste regulations. If there are any questions regarding this matter, please contact me at (913) 551-7136.

Sincerely,

Kendra Kennell

Kendra Kennell
RCRA Enforcement and State Programs Branch
Air, RCRA, and Toxics Division

Enclosure

cc: Joseph Obr, Iowa Dept. of Natural Resources

APR 0 8 1999

RECYCLE

PAPER CONTAINS RECYCLED FIBERS